



# HYBRID

CYCLING TECHNOLOGY™

## OWNER'S MANUAL



## WELCOME, AND CONGRATULATIONS...

...On your purchase of a new Giant Hybrid Cycling Technology bicycle; the fun of pedaling your new Giant Hybrid bicycle is only moments away.

### Safety First.

You should completely read through this owner's manual before you take your new Giant Hybrid Cycling Technology bicycle for a spin. By doing so, you will have a greater understanding of the general operation of the various components found on your new bike. Safe riding instructions are equally important and shouldn't be overlooked, so even if you are an experienced cyclist please take a moment to thoroughly read through this manual and also the standard Giant bicycle owner's manual before you ride. Your Hybrid Cycling Technology bicycle is intended for on-road use only. Off-road use, jumping or racing will put the user at risk of serious injury and death when you ride a bicycle. Always wear a correct-fitting helmet when you ride a bicycle.

### Sharing the Joy of the Ride.

Nothing makes us happier than seeing people out riding bikes. For over thirty years Giant has manufactured and distributed quality bicycles for every type of terrain and rider imaginable. Giant bicycles have allowed millions of cyclists just like you the opportunity to live happier, healthier lives because of the joy, exercise, and sheer exhilaration riding a bicycle brings. And it's this commitment to sharing the joy of the ride that inspires Giant to continually offer the world's most innovative bicycles.

### Learn More.

We encourage you to get connected and learn more about proper riding and safety through your local Authorized Giant Dealer. Giant independent bicycle retailers are the best in the nation at providing sales and service for all of your bicycle-related needs. Inside their bike shops is where you'll find knowledgeable staff that can assist you with everything you'll require to get the most out of your bike and your ride.

Enjoy.



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## NOTE:

This manual is not intended as a comprehensive service, repair or maintenance manual. Please see your Authorized Giant Dealer for all service, repairs or maintenance.

## FOR YOUR CONVENIENCE:

Take a moment to record the information below about your Hybrid bicycle. Keep this manual in a safe place for future reference.

Date of Purchase \_\_\_\_\_

Dealer \_\_\_\_\_

Key Number \_\_\_\_\_

Hybrid Bicycle Serial Number \_\_\_\_\_

# 1. WHAT IT'S CALLED

The bicycle and parts shown below are specific to the Twist Freedom DX bicycle. Your Hybrid Cycling Technology bicycle may have different specifications. Some of the terms below are often referred to by different names. The words in parentheses are names that are interchangeable with the specific part.



## A. GENERAL

- |  |   |
|--|---|
| 1. Handlebar   | 6. Rear Rack                            |
| 2. Fork  | 7. Rear Pannier Bag and EnergyPak Cover |
| 3. SyncDrive Motor (hub motor)                           | 8. EnergyPak Lock (battery lock)        |
| 4. Chainwheel and PedalPlus Power Sensor (torque sensor) | 9. Rear Light                           |
| 5. I <sup>2</sup> Driver Unit (driver board)             | 10. Mudguard                            |
|  | 11. Multi-speed Rear Hub/Sprocket       |



Chainstay dropout and PedalPlus Power Sensor      Rear derailleur      Crankset

## OTHER GIANT HYBRID CYCLING TECHNOLOGY BICYCLES...

In some Hybrid Cycling Technology bicycles, the PedalPlus Power Sensor is located on the drive-side chainstay dropout as indicated above. These bicycles may feature a multi-speed rear wheel that requires a rear derailleur to shift gears. These bicycles also may feature cranksets similar to those found on regular bicycles.

## B. ENERGYPAK AND CHARGER



1. EnergyPak (battery)
2. Handle
3. EnergyPak Lock with Key
4. Charging Socket



5. Charger
6. Charger Plug
7. Power Source Plug

## C. HANDLEBAR AND STEM



1. Handlebar
2. RideControl Command Center (left hand control)
3. Handlebar Stem
4. Power Control Switch (on models with two EnergyPaks)
5. Gear Shifter
6. Gear Indicator (may look different depending on model of bicycle)

## 2. ENERGYPAK AND CHARGER OPERATION



**THE ENERGYPAK(S) MUST BE FULLY CHARGED BEFORE THE FIRST RIDE OR IF THE BIKE HAS NOT BEEN RIDDEN FOR OVER A MONTH!!**

- Charge the EnergyPak in a room with a temperature between 0 - 37 degrees C.
- If you notice a strange smell or smoke, stop the charging procedure immediately! Take the EnergyPak and charger to your Authorized Giant Dealer for service or replacement.
- **DO NOT CHARGE THE ENERGYPAK FOR LONGER THAN 24 HOURS!!** This could seriously reduce the life of the EnergyPak.
- **NEVER CHARGE AN ENERGYPAK WHILE IT'S INSTALLED AND CONNECTED TO THE HYBRID BICYCLE!!**

### A. NORMAL CHARGING

EnergyPak Lithium-Ion battery: 244-LI9AH-02V

**STEP 1** On a Hybrid Cycling Technology bicycle with two EnergyPaks, turn the Power Control Switch (on right side of the handlebar) to the "OFF" position. On a bicycle with one EnergyPak, make sure the "ON/OFF" button is pushed to "OFF" on the RideControl Command Center (on the left side of the handlebar) and that none of the LED's on the unit are illuminated.



Power Control Switch - Two EnergyPak Hybrid bicycle  
Turn to "Off" to remove EnergyPaks



RideControl Command Center - Single EnergyPak Hybrid bicycle  
Push "ON/OFF" button to "OFF" to remove EnergyPak

**STEP 2** Follow steps A and B to open the Rear Pannier bag. Disregard these steps if your bicycle does not have the Rear Pannier bag.

Step A



Pull up

Step B



Pull

**STEP 3** Turn the EnergyPak lock key to the "OPEN" position and at the same time push the top of the EnergyPak outward to 45 degrees.



Key

Push

**STEP 4** Lift the EnergyPak pack out of its holder.



**STEP 5** Place the EnergyPak in a horizontal position and then insert the charger plug into the EnergyPak's charging socket.



**STEP 6** Connect the power source plug into a grounded electric outlet (AC 110-240 volts) and make sure that all poles are fully inserted into the socket. NOTE: Some Hybrid bicycles are equipped with a "Euro-style" power source plug. First insert that plug into the supplied adapter. Then insert the adapter into a grounded electric outlet (AC 110-240 volts).



**CAUTION**

KEEP THE AREA WHERE THE ENERGYPAK IS CHARGED WELL-VENTILATED AND FREE FROM LITTER OR ANYTHING ELSE COMBUSTIBLE TO AVOID FIRE FROM SPARKS OR OVERHEATING!!

**STEP 7** Confirm that LED lamp of the charger lights up red. The light should remain constant and not flash. When charging is finished (which could take approximately 6 hours) the light will go out. The EnergyPak is fully charged.



**CAUTION**

DO NOT CHARGE ENERGYPAK(S) FOR MORE THAN 24 HOURS!!

**STEP 8** Disconnect the EnergyPak from the charger after the charge is completed. Unplug the charger's power source plug from the electrical outlet.

**STEP 9** Mount the EnergyPak into its holder.

**Step A**

Slide the EnergyPak pack into its holder at a 45-degree angle. Make sure the "GIANT" logo on the EnergyPak is facing the outside of the bicycle.



**Step B**

Replace the handle. Gently pivot the EnergyPak to an upright position until the EnergyPak snaps into place. If the EnergyPak does not pivot easily, remove it and reposition it in the holder and try again.



**STEP 10** Make sure that the EnergyPak is secured in the "LOCK" position, so that it cannot move from side to side.






## B. ENERGYPAK LOCK KEY

Your Giant Hybrid Cycling Technology bicycle comes standard with 2 EnergyPak lock keys; we suggest you keep one in a safe place. Giant Hybrid Cycling Technology bicycle keys may be duplicated by a qualified locksmith. Blank keys for your Hybrid bicycle are available through your Authorized Giant Dealer.

Please record the key number for future reference and key replacement. If your keys are ever lost or stolen, contact your Authorized Giant Dealer for replacement.

## C. RANGE FOR ENERGYPAK

Running distance on one charge varies depending on rider weight, wind resistance, outdoor temperature, terrain, etc. The chart below is the approximate riding range, based on different road conditions, for ONE fully-charged Giant Hybrid Cycling Technology Bicycle EnergyPak.

RIDING CONDITION	ECO (KMS)	NORMAL (KMS)	SPORT (KMS)
Flat/No wind 	55 - 70	40 - 60	35 - 40
Slope or slight headwind 	45 - 55	35 - 45	25 - 35
Steeper incline or stiff headwind 	37 - 45	25 - 37	18 - 26

### PLEASE NOTE:

- In cold weather, the riding range per charge becomes shorter.
- The riding range per charge decreases as the charge/discharge cycle is repeated.
- The riding range may vary depending on road or riding conditions.
- The riding range decreases after prolonged use even if the number of charges is limited.

### 1. CONDITIONS THAT AFFECT ENERGYPAK RANGE

- Ambient temperature: Extreme cold and heat can deplete the EnergyPak's charge more quickly.
- Number of charges: The more charge cycles the EnergyPak has undergone, the less capacity it will have.
- Headwinds: Riding into a strong headwind will cause the motor to use more energy.
- Rider weight: A heavier rider will cause the motor to use more energy than with a lighter rider.
- Acceleration from a standing stop: Since more energy is used during initial acceleration, riding in conditions that force the rider to start and stop often (i.e. city traffic) will cause the motor to use more energy.
- Proper gear usage: Pedaling in the correct gear for the terrain will help save energy for both the rider and the EnergyPak.
- Poor maintenance: A dry or dirty chain and under-inflated tires can cause the motor to use more energy.

### 2. TO HELP MAINTAIN MAXIMUM RANGE

- Charge the EnergyPak at room temperature (between 0 – 37 degrees C)
- Use the proper gear while accelerating or riding uphill
- Don't ride with under-inflated tires and keep the chain clean and well-lubricated.

### 3. ENERGYPAK TIPS AND APPROXIMATE LIFE

- The EnergyPak is a Lithium-Ion battery. If used and maintained properly, the EnergyPak should last approximately 600 charging cycles.
- Use and drain the EnergyPak as much as possible before charging.
- In various localities, there are laws regulating proper disposal. **PLEASE CHECK YOUR LOCAL REGULATIONS FOR RECYCLING AND/OR PROPER DISPOSAL.**

### 4. EXTENDED STORAGE

- If the Hybrid Cycling Technology bicycle will not be ridden for an extended period of time, remove the EnergyPak(s) from the bicycle.
- Charge the EnergyPak(s) to the full level.
- Recommended storage temperature: 0 - 27 degrees F.
- Charge the EnergyPak(s) every 60 days!

## D. SAFETY PRECAUTIONS FOR ENERGYPAK AND CHARGER

These safety precautions are provided for your benefit to protect you and those around you. Please read and follow them carefully to avoid unnecessary injury, damage to the product, or damage to other property.

### ⚠ CAUTION

#### 1. ENERGYPAK

- Do not throw the EnergyPak (battery) into a fire.
- Do not apply the EnergyPak to other appliances.
- Use only the specified charger to charge the EnergyPak.
- Do not disassemble or modify the EnergyPak.
- Do not connect positive and negative terminals by using metallic – or any – objects.
- Keep the EnergyPak away from water. Pouring water on the EnergyPak may result in a short-circuit and overheating of the EnergyPak.
- Do not submerge the EnergyPak. Soaking the EnergyPak in water may cause irreparable damage.

### ⚠ CAUTION

#### 2. CHARGER

- Do not disassemble or modify the charger.
- Do not use the charger to charge batteries other than the EnergyPak(s) supplied.
- Do not subject the charger to shocks – such as dropping it.
- Keep the charger away from water.
- Do not touch the charger with your skin for long periods during charging. Burning of the skin may result.
- Do not cover the charger or place objects on it.
- Place the charger firmly on a flat surface. Using the charger upside-down or stretching the cord tight may result in malfunction, fire or electric shock.

### ⚠ WARNING

#### 3. CHARGER & ENERGYPAK

- **ALWAYS REMOVE THE ENERGYPAK FROM THE HYBRID CYCLING TECHNOLOGY BICYCLE FOR CHARGING! DO NOT CHARGE THE ENERGYPAK WHILE IT'S INSTALLED AND CONNECTED TO THE HYBRID BICYCLE!!**
- Do not short-circuit the terminals by allowing them to contact metal objects.
- Do not apply pressure to the cord or the plug. Placing heavy objects on the cord or the plug may result in electric shock or fire.
- Be sure to insert the plug fully into the electrical outlet.
- Do not touch the plug with wet hands.
- Keep the charger and EnergyPak out of reach of children or pets.
- Do not attempt to use another brand or model of charger to charge the EnergyPak.
- Do not use the charging plug and/or the power source plug when they are dusty. Clean both with a dry cloth.
- To remove a power cord from a socket, do not pull the power cord. Always pull the plug.
- Do not use damaged components such as a cracked or dented charger or EnergyPak, a frayed power cord, or a damaged plug. If the cord that goes between the charger and the EnergyPak is frayed or damaged in any way, do not use it. Contact your Authorized Giant Retailer for replacement components.
- Do not use sockets, connectors and other wiring devices with a power source other than standard (AC 110~240 volts) power supply.
- When charging is finished, please unplug the charger from the electrical outlet and then detach the EnergyPak(s) from the charger. **DO NOT CHARGE AN ENERGYPAK FOR MORE THAN 24 HOURS!**

## 3. HOW THINGS WORK

It is extremely important to the performance of your Hybrid Cycling Technology bicycle -- and to your personal enjoyment and safety -- that you understand how the features of the bicycle operate. Even if you are an experienced cyclist, you should not assume that the way things have worked on bicycles you've owned previously will operate similarly on this Hybrid bicycle. Be sure to read and understand this section of the owner's manual. If you have even the slightest doubt how any of the mechanical features on your Hybrid bicycle operate, talk to your Authorized Giant Dealer.

### A. HYBRID CYCLING TECHNOLOGY – ACTIVATING HYBRID POWER

Hybrid Cycling Technology provides motor assistance based on your pedaling force and speed. To activate hybrid power in a bicycle with two EnergyPaks, turn the Power Control Switch located on the right side of the handlebar to either the "R" or "L" position. This engages the EnergyPak on either the right ("R") side of the bicycle or the left ("L"). To activate hybrid power in a Hybrid bicycle with a single EnergyPak, push the "ON/OFF" button on the RideControl Command Center on the left side of the handlebar to "ON." If the EnergyPak is charged, the LED's will illuminate respective to the power available in the EnergyPak.



**Power Control Switch – Two EnergyPak Model**  
Turn to "L" or "R" to activate Hybrid Power

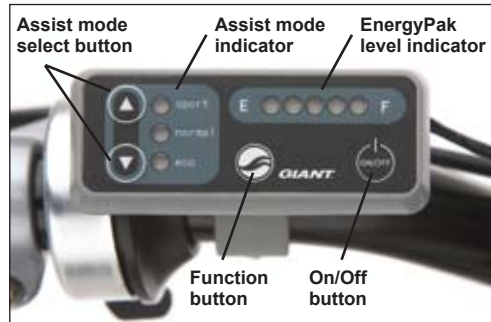
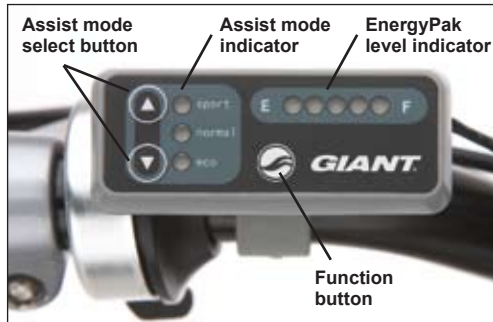


**RideControl Command Center – Single EnergyPak model**  
Push "ON/OFF" to activate Hybrid Power

- On a Hybrid bicycle powered by two EnergyPaks, when one EnergyPak has completely run down turn the Power Control Switch to the other EnergyPak indicator. For example, if you've been riding with the Power Control Switch at "R" and the right EnergyPak has completely run down, turn the Power Control Switch to the "L" position to once again engage hybrid power from a charged EnergyPak on the left.
- On a Hybrid bicycle powered by one EnergyPak, when the EnergyPak has completely run down, you must recharge that EnergyPak (see page 6) or replace it with a spare charged EnergyPak (available for purchase from your Authorized Giant Dealer). If you've carried a spare charged EnergyPak with you on your Hybrid bicycle, first make sure the "ON/OFF" button on your RideControl Command Center is "OFF" and NO LED's are illuminated. Then remove the depleted EnergyPak from it's holder as outlined in Steps 3 and 4 beginning on page 6. Install the spare charged EnergyPak in that holder as outlined in Steps 9 and 10 on page 8. Push the "ON/OFF" button on the RideControl Command Center to "ON" so that the LED's are once again illuminated, indicating hybrid power is again available.
- If your Hybrid bicycle is parked or stored with the EnergyPak(s) in place, make certain the Power Control Switch (on a model with two EnergyPaks) is turned to the "OFF" position. For a Hybrid bicycle with only one EnergyPak, make certain the "ON/OFF" button on the RideControl Command Center has been pushed so that NO LED's are illuminated. That indicates that hybrid power has been turned "OFF." **LEAVING YOUR HYBRID BICYCLE "ON" OR WITH THE POWER CONTROL SWITCH TO "L" OR "R" WHILE IT IS STORED OR PARKED WILL RESULT IN RAPID ENERGY LOSS!**
- If left unattended for 5 minutes, your Hybrid bicycle will go into a "sleep" mode. Simply turn the bicycle "OFF" (Power Control Switch on the two EnergyPak model to "OFF", RideControl Command Center "ON/OFF" button pushed to "OFF" on the single EnergyPak model) for 1 – 2 seconds. Then turn the Power Control Switch back to either "R" or "L" or push the "ON/OFF" button on the RideControl Command Center to "ON" to reactivate hybrid power.

## B. RIDECONTROL COMMAND CENTER

The RideControl Command Center is located on the left side of the handlebar. The pictures below show what the unit looks like on a Hybrid bicycle with two EnergyPaks (left) and with one EnergyPak (right).



### 1. ASSIST MODE SELECT BUTTON

- When a rider turns the Power Control Switch to “L” or “R” (or pushes “ON” on the RideControl Command Center on the single EnergyPak model), the Hybrid Cycling Technology bicycle provides Hybrid Power in the “NORMAL” mode as the rider pedals.
- If the rider wants to go faster, press the Assist Mode Select button to “SPORT” mode.
- Press the Assist Mode Select button to “ECO” mode to extend the range.
- When speed reaches 30 mph, the bicycle’s motor will automatically disengage and Hybrid Power will cease assistance. When speed drops below 30 mph, Hybrid Power will assist the rider once again.

### 2. ENERGYPAK CAPACITY

LEDS ILLUMINATED	ENERGYPAK POWER
	The EnergyPak has full power
	About 3/4 power remains
	About 1/2 power remains
	About 1/3 to 1/4 power remains
	Charging the EnergyPak is recommended
	The EnergyPak has completely run down -- Charging the EnergyPak is required!

**IMPORTANT:** Please note that the EnergyPak capacity shown on this table is approximate.

### 3. MALFUNCTION INDICATOR

If the LED lights flash while riding, it means there is a possible malfunction.



LEDS STATUS	WHAT'S HAPPENING	SOLUTION
L1 flashing	The battery has completely run down.	Charging the battery is required.
L2 flashing	Torque Sensor malfunction	Reset the power by turning the Power Control Switch to “OFF” (or pushing the “ON/OFF” button on the RideControl Command Center to “OFF”) and waiting several minutes. Turn the unit back on. If the symptom persists after this procedure, bring your Hybrid bicycle to an Authorized Giant Dealer.
L3 flashing	Driver overheating	
L4 flashing	Motor malfunction	

- Hybrid power is not available when any LED indicator is flashing.
- If one or more LED lights fail to illuminate during operation, check to see if the EnergyPak is charged and securely mounted.

### 4. SELF-TEST INDICATOR

The Self-Test system can help determine if two components, the PedalPlus Power Sensor and the SyncDrive Motor, are working properly. To begin the Self-Test, make sure the Hybrid Cycling Technology bicycle is resting on its kickstand on a flat, level surface and the power to the bicycle is “OFF.” Place the right pedal forward in the “3:00 o'clock” position.

- PEDAL PLUS POWER SENSOR TEST** - Press the “Function button” and – at the same time – turn the Power Control Switch to either “R” or “L”. On a single EnergyPak model, press the “Function button” and press the “ON/OFF” button at the same time. On both models, one or more of the LED’s from L2 to L5 on the RideControl Command Center should illuminate.
- While standing on the right side of the bicycle, steady it by holding the saddle with your left hand. Then step down on the right pedal while squeezing the right brake lever with your right hand. Don’t let the rear wheel move. L1, L2, L3 and L4 should light up in order on the RideControl Command Center, depending on the pressure you’ve generated while stepping on the right pedal. The harder you push down on the pedal, the more LED’s (up to L4) will light up.
- SYNCDRIVE MOTOR TEST** - Next, carefully lift the front of the bicycle off the ground and gently spin the front wheel backward. L2, L3 and L4 should light up on the RideControl Command Center and flash in sequence as the wheel spins. Stop the wheel from spinning and carefully place it back on the ground.

If the Hybrid Cycling Technology bicycle passes these two tests, it indicates the components are working properly. To ride again, turn the Power Control Switch to “OFF” and then back to “R” or “L” on the two EnergyPak model. Or push the “ON/OFF” switch on the RideControl Command Center to “OFF” and then back to “ON” in the single EnergyPak model to ride again.

If the bicycle did not pass either or both of these tests, bring it to your Authorized Giant Dealer for service.

## C. REAR RACK

If you carry items on the Rear Rack, make sure everything is securely fixed and free from the rear wheel, chain, etc. Total weight of the luggage must not exceed 35 lbs. The Rear Rack is not equipped with rack straps; ask your Authorized Giant Dealer for straps so luggage can be carried safely. **NEVER CARRY A PASSENGER!**



### CAUTION

**DO NOT ATTACH A CHILD CARRIER TO THE HYBRID CYCLING TECHNOLOGY BICYCLE!!**

## 4. SERVICE & MAINTENANCE



### CAUTION

#### A. RECOMMENDATION FOR CLEANING

Use a soft cloth, lightly moistened with water, to wipe the dirt off all plastic and metal parts. Wipe dry with a clean soft cloth.



**DO NOT** wash plastic parts or any components with running water. If the internal electrical parts become wet, corrosion, a short-circuit, a power-leak or other damage may occur.



**DO NOT** use chemical cleaners to wash plastic components. Chemical cleaners can cause color-changes, distortions, scratches or other damage to the finish.



**DO NOT** use high-pressure water spray or compressed air to clean the Hybrid Cycling Technology bicycle

#### B. AVOID LEAVING THE HYBRID CYCLING TECHNOLOGY BICYCLE OUTSIDE IN BAD WEATHER

Store the Hybrid Cycling Technology bicycle in a location where it's protected from rain, snow, and sun. Rain and snow can cause parts on the bicycle to corrode. The ultraviolet rays from the sun can -- OVER TIME -- FADE THE FINISH AND CRACK RUBBER OR PLASTIC COMPONENTS ON THE BICYCLE.

## 5. TROUBLESHOOTING GUIDE

This table is only a guide to aid you in getting your Hybrid Cycling Technology bicycle running again should you encounter a problem. If you are unable to get your Hybrid bicycle operating, bring it to an Authorized Giant Dealer.

SYMPTOM	POSSIBLE CAUSE	SOLUTION
Range less than expected	1. Cold weather reduces EnergyPak life	Allow EnergyPak(s) to reach room temperature and then fully charge.
	2. Riding up lots of hills Riding with frequent starts and stops	Larger amount of EnergyPak power is consumed as the bicycle is used under high load conditions.
	3. Riding at high gear ratio	Select the optimum position of the gear shift and/or Assist mode depending on uphill or down hill, head-wind or tail-wind, and your physical condition.